

New floristic records in the Balkans: 5*

Compiled by Vladimir Vladimirov¹, Feruzan Dane², Vlado Matevski³ & Kit Tan⁴

¹ Institute of Botany, Bulgarian Academy of Sciences, Acad. Georgi Bonchev St., bl. 23, 1113 Sofia, Bulgaria, e-mail: vdvlad@bio.bas.bg

² Department of Biology, Faculty of Science and Arts, University of Trakya, 22030 Edirne, Turkey, e-mail: feruzandane@yahoo.com

³ Institute of Biology, Faculty of Natural Sciences and Mathematics, St. Cyril and Methodius University, Gazi baba b/B, p.b. 162, MK 91000 Skopje, Macedonia, e-mail: vladom@iunona.pmf.ukim.edu.mk

⁴ Institute of Biology, University of Copenhagen, Øster Farimagsgade 2D, DK-1353 Copenhagen K, Denmark, e-mail: kitt@bi.ku.dk

* Reports for Bulgaria have been reviewed by V. Vladimirov, for Greece by Kit Tan, for Macedonia by V. Matevski, and for Turkey-in-Europe by F. Dane.

Abstract: New chorological data are presented for 79 species and subspecies from Bulgaria (records no. 1-8, 28-61), Greece (63-75), Macedonia (20-27) and Turkey-in-Europe (9-19, 62, 76-79). The taxa belong to the following families: *Apiaceae* (62), *Asteraceae* (6, 29, 30), *Berberidaceae* (63), *Boraginaceae* (31), *Brassicaceae* (32), *Campanulaceae* (33), *Caryophyllaceae* (11-24, 34-37), *Cistaceae* (38), *Crassulaceae* (39), *Cyperaceae* (52, 74, 75), *Dipsacaceae* (7, 40), *Ephedraceae* (28), *Fabaceae* (1, 41, 64-67), *Gentianaceae* (68), *Geraniaceae* (69), *Gesneriaceae* (70), *Guttiferae* (42), *Iridaceae* (53, 54), *Lamiaceae* (43-45, 71), *Liliaceae* (2, 55, 56), *Onagraceae* (72), *Orchidaceae* (3, 9, 10, 57, 58), *Oxalidaceae* (46), *Phytolaccaceae* (47), *Poaceae* (4, 27, 59-61), *Ranunculaceae* (25), *Rosaceae* (8, 26, 48), *Santalaceae* (49), *Scrophulariaceae* (50, 51, 73, 76-79) and *Taxaceae* (5).

First reports for countries are: Macedonia – *Silene exaltata* (22), Turkey – *Bupleurum apiculaum* (62). *Ophrys oestriifera* subsp. *heldreichii* (9) and *Orchis punctulata* (10) are reported for the first time for the Turkey-in-Europe and Balkan Peninsula.

The publication includes contributions by N. Apostolova-Stoyanova & S. Stoyanov (1-4), B. Assyov, V. Goranova & H. Pedashenko (5-8), M. Aybeke (9-10), F. Dane, G. Yilmaz, G. Dalgic & N. Polat (11-19), D. Dimitrov (20-27), A.S. Petrova, B. Assyov & R. Vassilev (28-61), S. Stoyanov (62), Kit Tan, U. Raabe & G. Vold (63), Kit Tan, G. Vold & G. Sfikas (64-75), G. Yilmaz & F. Dane (76-79).

This is the fifth report in a series dealing with the new chorological data of vascular plants in the Balkans. For details on the presentation of information see *Phytologia Balcanica*, vol. 12(1), pp. 107-108 and vol. 12(2), p. 279.

Reports 1–4

Nadezhda Apostolova-Stoyanova¹ & Stoyan Stoyanov²

¹ University of Forestry, 10 Kl. Ochriski St., 1756 Sofia, Bulgaria, e-mail: nadeto_to@yahoo.es

² Institute of Botany, Bulgarian Academy of Sciences, Acad. Georgi Bonchev St., bl. 23, 1113 Sofia, Bulgaria, e-mail: stoyanov@bio.bas.bg

Fabaceae

1. *Astragalus austriacus* Jacq.

Bu Znepole Region: Radomir district, Mt Golo Burdo, N of the Radomir Engineering Works, at the foothills of the mountain, on an open dry slope with SE exposure, 750 m, FN-61, with flowers, 24.05.2005, coll. N. Apostolova-Stoyanova & S. Stoyanov (SOM 163627); Radomir district, Mt Golo Burdo, N of the village of Stefanovo, at the foothills of the mountain, in dry grassy places, FN-61, 10.05.2004, with flowers, coll. N. Apostolova-Stoyanova & S. Stoyanov (SOM 163628).

This species has been so far known from the Black Sea Coast, Northeast Bulgaria, and the Danubian Plain (Assyov & Petrova 2006).

Liliaceae

2. *Allium nigrum* L.

Bu Znepole Region: Radomir district, Mt Golo Burdo, N of the Radomir Engineering Works, at the foothills of the mountain, in a smooth open country, on dry, well-developed soil, 775 m, FN-61, 24.05.2005, with fruits, coll. N. Apostolova-Stoyanova (SOM 163629).

This species has been so far known from the Pirin Mts (*Southern*), Rhodopi Mts, and Mt Strandzha (Assyov & Petrova 2006).

Orchidaceae

3. *Ophrys apifera* Huds.

Bu Znepole Region: Pernik district, Mt Golo Burdo, Ostritsa Reserve, in dry grassy places, on slanting open slopes, 1100 m, FN-61, 26.06.2005, with

flowers, coll. N. Apostolova-Stoyanova & S. Stoyanov (SOM 163625); Radomir district, Mt Golo Burdo, N of the town of Radomir (above the recreation zone), in dry grassy places, on slanting open slopes with SW exposure, 850 m, FN-61, 22.06.2005, with flowers, coll. N. Apostolova-Stoyanova (SOM 163626).

According to Assyov & Petrova (2006), *O. apifera* is known from the Black Sea Coast (*Southern*), Northeast Bulgaria, Forebalkan (*Western*), Balkan Range (*Eastern*), Sofia Region, Rhodopi Mts (*Eastern*), and Mt Strandzha. Subsequently, this species has been reported from the Thracian Lowland (Grozeva 2006) and the Balkan Range (*Western*) (Tashev & al. 2006).

Poaceae

4. *Elymus caninus* (L.) L.

Bu Znepole Region: Pernik district, Mt Golo Burdo, S of Bela voda village, in an artificial forest of *Pinus sylvestris*, 975 m, FN-61, 06.07.2004, coll. N. Apostolova-Stoyanova (SOM 163624); Radomir district, Mt Konyavska, Kolosh divide, above Zhitousha village, in stony places in a young forest, FM-59, 05.08.1956, coll. D. Jordanov & A. Yanev [SO 91185, sub *Agropyrum caninum* (L.) P. Beauv.].

This species has been so far known from Northeast Bulgaria, Danubian Plain, Forebalkan, Balkan Range, Sofia Region, Vitosha Region, West Frontier Mts, the Valley of Strouma River (*Southern*), Mt Belasitsa, Mt Slavyanka, Pirin Mts (*Northern*), Rila Mts, Rhodopi Mts (*Western & Central*), and Toundzha Hilly Country (Assyov & Petrova 2006).

Reports 5–8

Boris Assyov, Valentina Goranova & Hristo Pedashenko

Institute of Botany, Bulgarian Academy of Science, Acad. Georgi Bonchev St., bl. 23, 1113 Sofia, Bulgaria, e-mail: assyov@bio.bas.bg; goranova@bio.bas.bg; pedashenko@bio.bas.bg

New chorological data and remarks for some vascular plants in Bulgaria are presented below.

Taxaceae**5. *Taxus baccata* L.**

Bu Forebalkan (*Western*): Vrachanski Balkan Nature Park – on unscalable calcareous rocks in the Vrattsata pass, GN-08, 17.03.2007, obs. *B. Assyov, H. Pedashenko & V. Goranova*; on unscalable calcareous rocks between Vrattsata town and Skaklya waterfall, GN-08, 17.03.2007, coll. *B. Assyov & H. Pedashenko* (SOM 163840); on unscalable calcareous rocks at the Metkovski Dol ravine between Vrattsata town (Metkovets complex) and peak Svetogorski Kamuk, GN-08, 17.03.2007, obs. *B. Assyov, V. Goranova & H. Pedashenko*.

Taxus baccata is an endangered species, included in the Red Lists of Plants and Fungi in Bulgaria (unpubl.). It has never been reported from the Vrachanski Divide and the Forebalkan (*Western*), probably due to its inaccessible habitats. The species inhabits unscalable, almost vertical calcareous rocks between 600-700 m, and is usually accompanied by *Cotinus coggygria*, *Daphne oleoides*, *Fraxinus ornus*, *Syringa vulgaris*, *Centaurea chrysolepis*, *Festuca xanthina*, *Oenanthe millefolia*, *Sesleria coerulans* etc. In the other known Bulgarian localities *Taxus baccata* is usually found in forest habitats. In all three localities the species is well presented; at the Vrattsata pass 18 individuals were counted, in the Skaklya ravine 17 plants were noted; and in the Metkovski Dol ravine 15 individuals were found.

Asteraceae**6. *Inula helenium* L.**

Bu Forebalkan (*Western*): Vrachanski Balkan Nature Park – in the vicinity of Mutnitsa Monastery, GN-09, 04.10.2006, coll. *B. Assyov & V. Goranova* (SOM 163778); in the vicinity of St. Ivan Pusti Monastery, GN-08, 04.10.2006, coll. *B. Assyov & V. Goranova* (SOM 163772).

— Forebalkan (*Eastern*): in graminosis humidis et nemorosis ad urbem Trnovo, LH-97, 1898, coll. *I. Urumov* (SOM 77132, 77131, 77137); on dry calcareous hills east of Veliko Turnovo, LH-97, 24.07.1977, coll. *H. Kochev* (SOM 134938).

— Mt Slavyanka: Paril village, in Mezhdurek locality, in humid places near streams, GL-28, 10.08.1991, coll. *I. Pashaliev* (SOM 151721).

Dipsacaceae**7. *Knautia drymeia* Heuff.**

Bu Forebalkan (*Western*): Vrachanski Balkan Nature Park – above Pavolche village, along the trail to peak Vola, GN-18, 15.08.2006, coll. *V. Goranova & B. Assyov* (SOM 163774).

Rosaceae**8. *Alchemilla glaucescens* Wallr.**

Bu Forebalkan (*Western*): Vrachanski Balkan Nature Park – in the grasslands above Purshevitsa hut, below the ski lift, GN-08, 16.08.2006, coll. *B. Assyov & V. Goranova* (SOM 163773).

Reports 9–10**Mehmet Aybeke**

Department of Biology, Faculty of Science and Arts, University of Trakya, 22030 Edirne, Turkey,
e-mail: mehmetaybeke@yahoo.com

Orchidaceae**9. *Ophrys oestrifera* subsp. *heldreichii* (Schltr.) Soó**
(Syn: *O. heldreichii* Schltr.)

Tu(E) A1(E): Edirne, Keşan, from Beyköy to Erikli road, 3.8 km, under *Quercus* forest, 27 m, 40°38'17"N, 26°27'15"E, 12.05.2001, coll. & det. *M. Aybeke* (EDTU 8247); A2(E): İstanbul, Halkalı Tren station, on a hillside, 24.04.1960, coll. & det. *A. Baytop* (ISTE 5795).

This is the first record for European Turkey. Specimens of this taxon have been collected neither from Anatolia, nor from European Turkey. According to

Davis (1984) and Tutin & al. (1980), it is an E Mediterranean element with distribution in Greece and the Aegean. However, Davis (1984) has doubted these records. According to Buttler (1986), this taxon has not been recorded from European Turkey. According to Polunin (1987) and Buttler (1991), it does not occur in Greece and the Balkans. Furthermore, there are no recorded specimens in the herbaria of Turkey. It came to light (Aybeke 2004) while determining some *Orchidaceae* specimens collected by Aybeke from European Turkey. New for the flora of European Turkey and the Balkans.

10. *Orchis punctulata* Steven ex Lindley

Tu(E) A1(E): Çanakkale, Eceabat, Kilitbahir-Abide road, 1.5 km, in open places in a *Pinus* forest, 12 m, 40°08'48"N, 26°22'35"E, 07.04.2001, coll. & det. *M. Aybeke* (EDTU 8188); A1(E): Edirne, Keşan, İbrice harbor, inlet Italian, on a hillside, at a pathway, 40°51'21"N, 26°37'49"E, 20 m, 18.05.2002, coll. & det. *M. Aybeke* (EDTU 8368).

This is the first record for European Turkey. Speci-

mens of this taxon have been collected from Anatolia, but there is no record from European Turkey (Davis 1984; Butler 1986; Baytop 1988; Özhatay & al. 1999; Özhatay & Kültür 2006). According to Davis (1984), it is distributed in Greece and Asia and may be is not an E Mediterranean element. According to Polunin (1987) and Buttler (1991), this taxon is not distributed in Greece and the Balkans. New for the flora of European Turkey and the Balkans.

Reports 11–19
Feruzan Dane, Gulden Yilmaz, Guler Dalgic & Nagehan Polat

Department of Biology, Faculty of Science and Arts, University of Trakya, 22030 Edirne, Turkey,
e-mail: feruzandane@yahoo.com

This is a report of new records of nine *Silene* L. species for some counties of European Turkey, based on field work carried out in the period 1983-1999, especially in the years 1986, 1987 and 1988.

Some of the *Silene* species were collected by late Nagehan Polat (1994) during studies for her *Master Thesis*. We would be happy to pay tribute to her studies with this report.

Caryophyllaceae**11. *Silene conica* L.**

Tu(E) Edirne: Centre: Yildirim Avenue, 26 m, 41°40'28"N, 26°33'39"E, 21.05.1988, coll. *N. Polat* (EDTU 2500); Taslimusellim village, 193 m, 41°49'N, 26°47'E, 01.06.1987, coll. *F. Dane* & *N. Polat* (EDTU 907); Hasanpınar village, 94 m, 41°10'N, 26°45'E, 11.05.1988, coll. *G. Dalgic* & al. (EDTU 2037); Lalapasa: Bağlık stream, 172 m, 41°50'N, 26°44'E, 04.05.1988, coll. *G. Dalgic* & *N. Basak* (EDTU 1983); Uzunköprü: Copkoy: Karsibag village, 56 m, 41°13'11"N, 26°49'22"E, 17.05.1987, coll. *N. Polat* (EDTU 2697).

New for A1(E): Edirne in European Turkey. The species has been known so far from A1 (E): Canakkale and A2(E): Istanbul (Coode & Cullen 1967).

12. *Silene dichotoma* Ehrh. subsp. *dichotoma*

Tu(E) Edirne: Kesan: Mecidiye village, 40°38'20"N, 26°32'14"E, 09.05.1994, coll. *G. Dalgic* (EDTU 5855); Ipsala: Ipsala-Kesan 6 km, around Esetce, 87 m, 40°52'N, 26°26'E, 13.06.1988, coll. *N. Polat* & *S. Polat* (EDTU 2537); Lalapasa: Donkoy, 334 m, 41°56'N, 26°42'E, 06.06.1988, coll. *N. Polat* (EDTU 2485); Hacıdanışment-Muhittinbaba hill, 405 m, 41°54'33"N, 26°49'24"E, 05.06.1988, coll. *N. Polat* & *F. Dane* (EDTU 2527).

New for A1(E): Edirne in European Turkey. The species has been known so far from A1 (E): Canakkale and A2(E): Istanbul (Coode & Cullen 1967).

13. *Silene fabaroides* Hausskn.

Tu(E) Tekirdag: Sarkoy: Ucmakdere, 33 m, 40°47'49"N, 27°21'55"E, 11.06.1999, coll. *G. Dalgic* (EDTU 4412), 05.08.2001, coll. *G. Dalgic* (EDTU 8267).

New for A1(E): Tekirdag in European Turkey. This species was recorded by Dalgic & Dane (1993) and added to the flora of Turkey with the specimens collected from Edirne (Özhatay & al. 1994).

14. *Silene frivaldskyana* Hampe

Tu(E) Edirne: Kesan: Mecidiye seaside, 40°38'20"N, 26°32'14"E, 08.07.1988, coll. *G. Dalgic* & *N. Polat* (EDTU 2542); Erikli village, 27 m, 40°38'17"N, 26°27'15"E, 30.07.1998, coll. *G. Dalgic* (EDTU 4304); Lalapasa: Bağlık stream, 172 m, 41°50'N, 26°44'E, 27.08.1988, coll. *N. Polat* & *F. Dane* (EDTU 2546).

This species has been reported so far only from A1(E): Edirne (Coode & Cullen 1967). However, its occurrence in Turkey required confirmation, owing to the lack of any recorded specimens from Edirne. Thus, the specimens above prove the location of *Silene frivaldskyana* in European Turkey.

15. *Silene gallica* L.

Tu(E) Edirne: Centre, 26 m, 41°40'28"N, 26°33'39"E, 09.06.1988, coll. *N. Polat* (EDTU 2488); Kircasali, 89 m, 41°23'33"N, 26°48'11"E, 09.06.1988, coll. *N. Polat* (EDTU 2490); Lalapasa: Bağlık stream, 172 m, 41°50'N, 26°44'E, 05.06.1988, coll. *N. Polat* (EDTU 2531); Suleoglu, 156 m, 41°46'02"N, 26°54'43"E, 28.05.1988, coll. *N. Polat* (EDTU 2509); Uzunkopru, 7 m, 41°16'10"N, 26°41'10"E, 01.05.1988, coll. *G. Dalgic* & *N. Polat* (EDTU 2498).

— Kirklareli: Demirkoy, 283 m, 41°55'N, 26°41'E, 03.06.1988, coll. *F. Dane* & *G. Dalgic* (EDTU 2758); Vize, Saka lake, 186 m, 41°34'21"N, 27°45'57"E, 12.06.1991, coll. *F. Dane* & *G. Dalgic* (EDTU 4657).

New for A1(E): Edirne and Kirklareli in European Turkey. So far the species has been known from A1(E): Canakkale and A2(E): Istanbul (Coode & Cullen 1967).

16. *Silene italica* (L.) Pers.

Tu(E) Edirne: Centre, near the Faculty of Medicine, 26 m, 41°40'28"N, 26°33'39"E, 07.07.1988, coll. *F. Dane* & *al.* (EDTU 2301); Ahikoy village, 76 m, 41°46'N, 26°24'E, 09.06.1988, coll. *G. Dalgic* & *N. Polat* (EDTU 2534); Buyukismailce village, 118 m, 41°48'N, 26°29'E, 09.06.1988, coll. *G. Dalgic* & *N. Polat* (EDTU 2536); Enez: Vakıfkoy village, at the seaside, 40°07'N, 26°15'E, 31.05.1987, coll. *G. Dalgic* (EDTU 1048); Lalapasa, 172 m, 41°50'N, 26°44'E, 05.06.1988, coll. *N. Polat* (EDTU 2529); Hacıdanışment-Muhittinbaba hill, 405 m, 41°54'33"N, 26°49'24"E, 05.06.1988, coll. *N. Polat* (EDTU 2526); Suleoglu, Sulecik village, 212 m, 41°49'N, 26°51'E, 28.05.1988, coll. *N. Polat* (EDTU 2514); Uzunkopru: around Degirmenci dam, 20 m, 41°18'37"N, 26°42'02"E, 25.04.1989, coll. *N. Polat* & *F. Dane* (EDTU 3467).

— Kirklareli: Demirkoy, 244 m, 41°49'17"N, 27°45'38"E, 03.06.1988, coll. *F. Dane* & *G. Dalgic* (EDTU 2757), Sogucak village, 316 m, 41°39'00"N, 27°39'00"E, 06.05.1994, coll. *G. Dalgic* (EDTU 5830).

— Tekirdag: Sarkoy: 0 m, 40°36'58"N, 27°06'03"E, 20.04.1990, coll. *F. Dane* (EDTU 4492).

New for A1(E) with the specimens collected from Edirne, Kirklareli and Tekirdag in European Turkey. The

species has been known so far from A2(E): Istanbul. (Coode & Cullen 1967).

17. *Silene otites* (L.) Wibel

Tu(E) Edirne: Centre: Budakdoganca village, 98 m, 41°45'37"N, 26°20'33"E, 08.07.1988, coll. *N. Polat* (EDTU 2409); Lalapasa: Bağlık stream 172 m, 41°50'N, 26°44'E, 26.08.1988, coll. *N. Polat* (EDTU 2543), 27.08.1988, coll. *N. Polat* & *F. Dane* (EDTU 2547).

— Tekirdag: Sarkoy: 0 m, 40°36'58"N, 27°06'03"E, 15.07.1988, coll. *F. Dane* (EDTU 2581).

New for A1(E) with the specimens collected from Edirne and Tekirdag in European Turkey. So far the species has been known from A2(E): Istanbul. (Coode & Cullen 1967).

18. *Silene trinervia* Sebast. & Mauri

Tu(E) A1(E) Edirne: Centre: near the Faculty of Medicine, 26 m, 41°00'28"N, 26°33'39"E, 10.06.1990, coll. *F. Dane* (EDTU 4491); Musabeyli village, 109 m, 41°40'60"N, 26°40'00"E, 23.06.1989, coll. *F. Dane* & *N. Polat* (EDTU 3632).

— A1(E) Tekirdag: Hayrabolu, Yurukler village, 86 m, 41°07'22"N, 27°14'36"E, 22.06.1987, coll. *F. Dane* (EDTU 1508).

This species has been known only from the Aegean Islands (Khios) (Coode & Cullen 1967). Recently, it was recorded by Dane & al. (1992). These studies have added new localities with the specimens collected from Edirne and Tekirdag in this report.

19. *Silene vulgaris* (Moench) Garcke

Tu Edirne: Centre: Budakdoganca village, 98 m, 41°45'37"N, 26°20'33"E, 09.06.1988, coll. *G. Dalgic* & *N. Polat* (EDTU 2535); Ahikoy village, 76 km, 41°46'N, 26°25'E, 02.06.1987, coll. *G. Dalgic* & *N. Basak* (EDTU 820); Yenikadin village, 26 m, 41°40'28"N, 26°33'39"E, 14.06.1988, coll. *N. Polat* (EDTU 2513); Hacıumur village, 123 m, 41°43'N, 26°48'E, 29.05.1988, coll. *N. Polat* (EDTU 2517); Sinankoy village enter, 181 m, 41°48'N, 26°43'E, 08.05.1986, coll. *G. Dalgic* & *al.* (EDTU 357); Suleoglu: around Kovankaya dam, 156 m, 41°46'02"N, 26°54'43"E, 28.05.1988, coll. *N. Polat* (EDTU 2512).

New for A1(E) with the specimens collected from Edirne in European Turkey. So far the species has been known from A1(E): Kirklareli and A2(E): Istanbul (Coode & Cullen 1967).

Reports 20–27**Dimitar S. Dimitrov**

National Natural History Museum, Bulgarian Academy of Science, 1 Tsar Osvoboditel Blvd., 1000 Sofia, Bulgaria,
e-mail: dimitroff@mail.bg

Caryophyllaceae

20. *Arenaria conferta* Boiss. var. *macedonica* Micevski
Mk Mt Jablanica: peak Poljak, on calcareous rocks,
17.07.1948, coll. *B. Kitanov* (SO 100260).

This species has been known so far only from Mt Shar (Micevski 1993).

21. *Cerastium brachypetalum* subsp. *tenoreanum* (Ser.) Soó

Mk Mt Jablanica: In herbaceous places above Gorna Belica village, 1400 m, 22.06.1948, coll. *B. Kitanov* (SO 100123).

New species for this mountain (Micevski 1993).

22. *Minuartia bosniaca* K. Malý

Mk Treska River Gorge, Matka locality, Skopje, 15.06.1947, coll. *B. Kitanov* (SO 100240).

This species has been known so far from Mavrovo (Micevski 1993).

23. *Silene exaltata* Friv.

Mk Radovis-Strumica, 04.06.1913, coll. *T. Nikolov* (SO 21122).

New species for the flora of Macedonia (Micevski 1993).

24. *Silene lerchenfeldiana* Baumg. var. *lerchenfeldiana*

Mk At Kajalii village, Valandovo district, 05.05.1917, coll. *T. Nikolov* (SO 21053).

New locality of this taxon (Micevski 1993).

Ranunculaceae

25. *Ranunculus sartorianus* Boiss. & Heldr.

Mk Marijovo district, 05.1910, coll. *V. Stříbrný* (SOM 28484); Nidje Mt: Peak Kubceto, 24.04.1916, coll. *J. Mrkvička* (SOM 28153).

Rosaceae

26. *Alchemilla erythropoda* Juz.

Mk Mt Korab: in forest clearings along river Stirovica, 1100 m, 30.08.1947, coll. *B. Kitanov* (SO 38136).

Poaceae

27. *Alopecurus creticus* Trin.

Mk Ovce Pole, 31.05.1947, coll. *B. Kitanov* (SO 99662).

This Mediterranean element is known from the southern part of Macedonia, around river Strumica, Monospitovo village, Gevgelija district, Stojanovo village; Prilep district, Krivogastani village and Dracevo village, Skopje ditrict.

Reports 28–61**Antoaneta S. Petrova¹, Boris Assyov² & Rossen Vassilev³**

¹ Botanical Garden, Bulgarian Academy of Sciences, P.O. Box 664, 1000 Sofia, e-mail: petrovabotgar1@abv.bg

² Institute of Botany, Bulgarian Academy of Sciences, Acad. Georgi Bonchev St., bl. 23, 1113 Sofia, Bulgaria, e-mail: assyov@bio.bas.bg

³ Bulgarian Biodiversity Foundation, 75 Sredna gora St., 1303 Sofia, Bulgaria, e-mail: rossen.vassilev@biodiversity.bg

This contribution comprises data on the occurrence of 34 vascular plant taxa in various floristic regions of Bulgaria. For some taxa new chorological data are reported, for others confirmative records are made by supplying herbarium specimens.

The information in this report has been collected mainly during the authors' fieldtrips in the period 2003–2005, and also during their checks in the Bulgarian herbaria. Distribution of some of the species in these regions is recorded in the *Conspectus of the Bulgarian Vascular Flora* (Assyov & Petrova 2006) but we consider publication of data about the localities and populations important, especially for some rare for Bulgaria species.

Ephedraceae**28. *Ephedra fragilis* Desf.**

Bu Valley of Strouma River (*Southern*): on the southern slope of the Pchelina hill, near General Todorov village, FL-89, 16.05.2004, single individual in the vegetative stage, coll. B. Assyov & S. Platikanov (SOM 160874).

Only one locality with two individuals of this extremely rare species has been known so far in Bulgaria (Velchev & Bondev 1961).

Asteraceae**29. *Centaurea immanuelis-loewii* Degen**

Bu Znepole Region: on the the southern slopes of Mt Golo Burdo, northwards from Staro Selo village, on calcareous terrain, FN-70, 14.06.1999, with flowers, coll. A. Petrova (SOM 155250).

This Balkan endemic species has a restricted area in Greece and Bulgaria. Until recently, it has been known only from few localities in the area of Sandanski town and Kresna gorge in the Strouma Valley (Apostolova & Denchev 1997). Bancheva & Greilhuber (2006) investigated the population in the Mt Golo Burdo. Dimitrov & Gushev (1995) reported a locality in Mt Konyova, on a stony limestone terrain, in contrast with those in Sandanski and the Kresna gorge area, where the plant grows on siliceous sandstone.

The locality on the southern slopes of Mt Golo Burdo is the northernmost in the area. It is quite large. The total area covers about 80 ha but the population is mosaic in structure, with 0.01-0.5 ha spots with *C. immanuelis-loewii*, and spots without it. The ecological conditions are: south-facing slopes with 10-30° inclination; rocky limestone occasionally turned into screes; open vegetation with single trees or shrubs, and very diverse grass cover. A number of Balkan endemic species have been found there too: *Achillea serbica*, *Anthylis aurea*, *Astragalus spruneri*, *Bromus moesiacus*, *Corothismus rectipilosus*, *Edraianthus serbicus*, *Hypericum rumeliacum*, *Scabiosa triniifolia* etc.

30. *Scorzonera mollis* M. Bieb.

Bu Valley of Strouma River (*Southern*): dry grassy places at the hills N from the railway station of General Todorov, FN-61, 20.04.1998, in flowers, coll. B. Assyov (SO 101488).

According to Peev (1992) *S. mollis* is known from the Black Sea Coast, Northeast Bulgaria, Pirin Mt, Mt Sredna Gora, Central Rhodopi Mts, and the Thracian Lowland. The species has been also reported

from Znepole Region – Mt Golo Burdo (Stanev 1965), Mt Strandzha (Gushev & al. 1998a) and the Valley of Strouma River (“mainly in the Kresna gorge”) by Stojanov & Stefanov (1948).

Boraginaceae**31. *Echium russicum* J.P. Gmel.**

Bu Mt Sredna Gora (*Western*): in a pasture along the trail from the Gola Mogila hill to Pasarel village, about 900 m, GN-01, 12.06.2005, coll. A. Petrova & R. Vassilev (SOM 162016). About hundred plants were observed.

The species is included in the Annex IIb of the Council Directive 42/93. According to the general sources for the Bulgarian flora, it is distributed in all or almost all floristic regions (Petrova 1992), but actually it is a comparatively rare species of local distribution.

Brassicaceae**32. *Capsella rubella* Reut.**

Bu Valley of Strouma River (*Southern*): in a pasture on the northern slope of the Kozhuh hill, Petrich district, FL-88, 27.03.2003, with flowers, coll. A. Petrova, B. Assyov & R. Vassilev (SOM 158554); on the southern slope of the Pchelina hill, near General Todorov village, FL-89, 29.03.2003, with flowers and fruits, coll. A. Petrova, B. Assyov & R. Vassilev (SOM 158554).

This is a new species for this region, apparently not uncommon in this part of the Valley of River Strouma. Until recently, it has been reported from the Thracian Lowland and Rhodopi Mts (Anchev 1992; Gushev & al. 1998b), but was also found along the Black Sea Coast (*Southern*), in the Balkan Range (*Eastern*) and Mt Strandzha (Petrova 2004a). Thus, apparently this Mediterranean species is more widespread in the southern parts of the country than it was previously thought.

Campanulaceae**33. *Campanula scutellata* Griseb.**

Bu Vitosha Region: Mt Verila, in a pasture at the Malako Gradishte locality, above Kraynitsi village, FM-88, 07.08.2004, with flowers and fruits, coll. A. Petrova, B. Assyov & R. Vassilev (SOM 160915).

Caryophyllaceae**34. *Silene dioica* (L.) Clairv.**

Bu Balkan Range (*Western*): the pass of Petrohan, FN-77, 12.06.2003, in flowers, coll. B. Assyov (SOM 160880).

The species has been previously reported for the region by Panov (1975), but the corresponding specimen was found missing in the Bulgarian herbaria (Assyov & Vassilev 2004). This new find confirms the occurrence of *S. dioica* in the Balkan Range (*Western*).

35. *Silene gallinyi* Rchb.

Bu Vitosha Region: a pasture in the locality of Malko Gradishte above the village of Kraynitsi, FM-88, 07.08.2004, in flowers and fruits, coll. A. Petrova, B. Assyov & R. Vassilev (SOM 160896).

A new species for the flora of Vitosha Region.

36. *Silene nutans* L.

Bu West Frontier Mts: Osogovo Mt, near the chalet Trite Bouki, FM-37, 28.06.2003, in flowers, coll. B. Assyov (SOM 160884).

A new species for the West Frontier Mts.

37. *Silene sendtneri* subsp. *balcanica* (Form.) Greuter (*S. velenovskiyana* Jordanov & Panov, *nom. illeg.*)

Bu West Frontier Mts: Osogovo Mt, near the chalet Trite Bouki, FM-37, 28.06.2003, in flowers, coll. B. Assyov (SOM 160883); Osogovo Mt, 1902 (s. d. ex.), in flowers, coll. I. Urumoff (SOM 23270 sub *S. roemerii* Friv.); Osogovo Mt, above the frontier post, FM-37, 23.09.1966, in flowers, coll. D. Peev (SOM 139742 sub *S. roemerii* subsp. *balcanica* Form., rev. M. Niketić sub *S. velenovskiyana*); Osogovo Mt, in the meadows at the holiday house, FM-37, 18.06.1971, in flowers, coll. D. Jordanov & N. Nikolov (SOM 139516).

The species is reported for the first time from the region of West Frontier Mts, despite of the fact that older specimens of it are available in the herbaria SOM and SOA.

Cistaceae

38. *Xolanthes guttatus* (L.) Rafin.

Bu Vitosha Region: in a meadow on the slopes of Mt Verila, above the Sveti Georgi chapel, N from the Saparevo area in the town of Sapareva Banya, FM-88, 07.08.2004, with flowers and fruits, coll. A. Petrova, B. Assyov & R. Vassilev (SOM 160916).

Crassulaceae

39 *Crassula tillaea* Lest.-Garl.

Bu West Frontier Mts: in a pasture on the slopes of Mt Ograzhden, near Drenovitsa village, FL-78, 29.03.2003, with flowers, coll. A. Petrova, B. Assyov & R. Vassilev (SOM 158549).

— Valley of Strouma River (*Southern*): on the southern

slope of the Pchelina hill, near General Todorov village, FL-89, 28.03.2003, with flowers, coll. A. Petrova, B. Assyov & R. Vassilev (SOM 158550); in a pasture on the northern slope of the Kozhuh hill, Petrich district, FL-88, 28.03.2003, in flowers, coll. A. Petrova, B. Assyov & R. Vassilev (SOM 158548).

This is a small annual plant, with a short vegetation period in early spring, which might be the reason why the species was infrequently recorded in Bulgaria.

Dipsacaceae

40. *Scabiosa argentea* L.

Bu Danubian Plain: near Polsko Kosovo village, LJ-90, 08.1932, coll. K. Popov (SO 71683).

— Forebalkan (*Eastern*): dry grasslands near Turnovo, LH-96, 1896, coll. I. Urumoff (SOM 73935).

— Balkan Range (*Eastern*): Aitos, NH-22, 10.08.1888, coll. S. Georgiev (SO 71686).

— Znepole Region: the southern slopes of Golo Burdo Mt., N from the village of Staro Selo, calcareous terrain, FN-70, 09.07.2001, obs. A. Petrova.

— West Frontier Mts: Osogovo Mt, at the road between the town of Kyustendil and the village of Bogoslov, FM-37, 27.06.2003, in flowers, coll. B. Assyov (SOM 160881).

— Valley of Mesta River: SE of Nevrokop (town of Gotse Delchev), GM-20, 17.07.1938, coll. D. Yordanov (SO 71689).

— Pirin Mts (*Northern*): above the town of Razlog, GM-03, 30.07.1938, coll. N. Stoyanov (SO 71697); at the locality "Peshterite" above the town of Bansko, GM-03, 11.07.2001, obs. A. Petrova.

— Rhodopi Mts (*Western*): limestone slopes near Čepino (the town of Velingrad), KG-55, 25.07.1925, coll. B. Davidoff (SOM 73942).

— Toundzha Hilly Country: Sakar Mt near Topolovgrad, MG-45, 23.07.1962, coll. N. Vichodtsevsky (SO 71693); Kazanluk, Stara reka locality, dry grasslands, LH-61, 14.08.1941, coll. A. Yurkovsky (SOM 73876).

As we have already noted (Assyov & Vassilev 2004; Petrova 2004b), in the contemporary general floristic sources on Bulgaria *S. argentea* was mentioned only for several floristic regions. Actually, this is a comparatively widely distributed species in xerophytic habitats in the country, more frequently on calcareous terrains.

Fabaceae

41. *Trifolium strictum* L.

Bu Mt Sredna Gora (*Western*): in the vicinity of the

village of Gabra, GN-11, 24.06.2004, in flowers, coll. B. Assyov & R. Vassilev (SOM 161249).

Guttiferae

42. *Hypericum rochelii* Griseb. & Schenk subsp. *rochelii*

Bu Mt Sredna Gora (*Western*): in grassy places on the southern slope of peak Lalina Mogila, GN-01, 12.06.2005, coll. A. Petrova & R. Vassilev (SOM 162017).

Lamiaceae

43. *Calamintha grandiflora* (L.) Moench

Bu West Frontier Mts: Mt Osogovo, near the Trite Bouki chalet, FM-37, 28.06.2003, with flowers, coll. B. Assyov (SOM 160882).

The species has been reported earlier from the region of West Frontier Mts (Kitanov & al. 1987), but the report has been omitted later by Markova (1992) and Dimitrov (2002). This new finding confirms the occurrence of the species in this floristic region and is a new record for the flora of Mt Osogovo.

44. *Stachys angustifolia* M. Bieb.

Bu Vitosha Region: a pasture in the locality of Malko Gradishte above the village of Kraynitsi, FM-88, 07.08.2004, coll. A. Petrova, B. Assyov & R. Vassilev (SOM 160913).

45. *Thymus atticus* Čelak.

Bu Znepole Region: the southern slopes of Golo Burdo Mt, N from the village of Staro Selo, calcareous screens, FN-70, 14.06.1999, in flowers, coll. A. Petrova (SOM 155244).

Thymus atticus is a Balkan endemic with southern distribution. In Bulgaria it is found in the regions with Mediterranean floristic influence – Valley of Strouma River (*Southern*), Mt Slavjanka, Pirin Mts (*Southern*), Valley of Mesta River, Rhodopi Mts (*Eastern*), Thracian Lowland, and Mt Strandzha (Markova 1989). The new locality in Znepole Region is the northernmost one in the country as for the accompanying *Centaurea immanuelis-loewii*.

Oxalidaceae

46. *Oxalis dilenii* Jacq.

Bu Valley of Strouma River (*Southern*): adventive on the streets of Petrich town, FL-88, 02.08.2004, with flowers & fruits, coll. B. Assyov (SOM 160885).

Phytolaccaceae

47. *Phytolacca americana* L.

Bu Mt Belasitsa: along the road between Petrich town

and Belasitsa chalet, FL-78, 01.09.2004, with flowers and fruits, coll. B. Assyov (SOM 161174).

This adventive species is reported for the first time from Mt Belasitsa (Vladimirov 2001).

Rosaceae

48. *Aphanes arvensis* L.

Bu Valley of Strouma River (*Southern*): in a stony pasture on the slopes of Mt Ograzhden, westwards from Purvomay village, along the road, FL-78, 29.03.2003, with flowers, coll. A. Petrova, B. Assyov & R. Vassilev (SOM 158558).

Santalaceae

49. *Thesium dollineri* Murb.

Bu Vitosha Region: meadows at the slopes of Verila Mt, in the locality of Malko Gradishte above the village of Kraynitsi, FM-88, 07.08.2004, in flowers and fruits, coll. A. Petrova, B. Assyov & R. Vassilev (SOM 160921).

Scrophulariaceae

50. *Linaria pelisseriana* (L.) Mill.

Bu Vitosha Region: in a pasture on the slopes of Mt Verila, in the locality of Malko Gradishte, above Kraynitsi village, FM-88, 07.08.2004, with flowers and fruits, coll. A. Petrova, B. Assyov & R. Vassilev (SOM 160917).

51. *Verbascum lychnitis* L.

Bu Mt Sredna Gora (*Western*): grassy places along the trail from Vlakovete locality to Peak Lalina Mogila, GN-01, 12.06.2005, coll. A. Petrova & R. Vassilev (SOM 162028).

A new species for the the flora of Mt Sredna Gora (Stefanova-Gateva 1995).

Cyperaceae

52. *Carex panicea* L.

Bu Sofia Region: near Kazichene village, 22.07.1924, coll. D. Yordanov (SO 10119).

— Mt Sredna Gora (*Western*): in a meadow at the southern foothills of peak Lalina Mogila, 1100 m, GN-01, 12.06.2005, coll. A. Petrova & R. Vassilev (SOM 162014).

Carex panicea is a comparatively widespread species in Bulgaria, but quite local, and this is the reason for inaccurate documenting of its distribution. Recently, it has been also confirmed for Vitosha Region (Mt Vitosha), Rhodopi Mts (*Central* & *Western*) and Balkan Range (*Eastern*) (Assyov & Vassilev 2004; Grozeva &

al. 2004; Petrova 2004b). In our opinion, the species is also spread at least in the floristic regions of the Forebalkan, Balkan Range (*Western*) and Znepole Region, where there are many appropriate habitats.

Iridaceae

53. *Romulea bulbocodium* (L.) Sebast. & Mauri

Bu West Frontier Mts: in a pasture on the slopes of Mt Ograzhden, near Drenovitsa village, FL-78, 29.03.2003, with flowers, coll. A. Petrova, B. Assyov & R. Vassilev (SOM 158562). The population covered an area of about 0.5 ha, with variable density: in spots with up to 15 plants per m².

54. *Romulea linairesii* subsp. *graeca* Bég.

Bu Valley of Strouma River (*Southern*): at the southern slope of the hill of Pchelina, at the village of General Todorov, FL-89, 28.03.2003, in flowers and fruits, coll. A. Petrova, B. Assyov & R. Vassilev (SOM 158563).

The species is represented by a relatively large population mainly at the top of the hill, where it forms groups in places with density up to 10 individuals per square meter. In 1998 individuals are seen also at the northern slope of the hill.

Stenomediterranean element, this species was reported for the first time for Bulgaria by Chinkova & Fakirova (1970) from Black Sea Coast (*Southern*), but this contribution remained neglected later (Petrova 1992). Recently it was rediscovered in the Eastern Rhodopi Mts (Petrova & al. 1998) and later also in Mt Strandzha (Georgieva 2000).

Liliaceae

55. *Asphodeline liburnica* (Scop.) Rchb.

Bu Mt Sredna Gora (*Western*): in grassy places on the southern slope of peak Lalina Mogila, GN-01, 12.06.2005, coll. A. Petrova & R. Vassilev (SOM 162009).

Stanev (1971) reported this species for Mt Sredna Gora on the basis of a voucher collected near Hisarya town, but neither Petrova (1992), nor Dimitrov (2002) has recorded it for the region. This new finding confirms the species for the flora of Mt Sredna Gora.

56. *Fritillaria orientalis* Adams

Bu Mt Sredna Gora (*Western*): in grassy places on peak Lalina Mogila, GN-01, 12.06.2005, coll. A. Petrova & R. Vassilev (SOM 162017).

A rare species (Popova 1984). It has been reported earlier from the region of Lozenska Mt (Yanev 1964), but

this contribution was omitted later by Petrova (1992) and Dimitrov (2002).

Orchidaceae

57. *Ophrys mammosa* Reut.

Bu Valley of Strouma River (*Southern*): in dry grassy places on the hills N from the General Todorov railway station, FL-89, 20.04.2004, with flowers, obs. B. Assyov & A. Tosheva; in dry grassy places in shrubs of *Quercus coccifera* on the Sveti Iliya hill, GL-09, 17.05.2004, with flowers, obs. B. Assyov & D. Sopotlieva. Single individuals.

Stoyanov (1964) wrote that this species is locally distributed in different parts of the country. Andreev (1992) specified the distribution of *O. mammosa* as found only in some floristic regions, but the Valley of Strouma River was not among them. There are two earlier samples from the Valley of Strouma River (*Southern*): "Valley of Strouma River, in shrubby places on the Maluk Kozhuh hill", 07.05.1959, coll. I. Bondev & V. Velchev (SOM 106104) and "Sveta Troitsa, in the meadows above river Strouma", 04.05.1930 (SOM 14308). The new data confirm the contemporary distribution of this rare and protected species in the region.

58. *Orchis papilionacea* L.

Bu Valley of Strouma River (*Southern*): in dry grassy places on the hills N of the General Todorov railway station, FL-89, 20.04.2004, coll. B. Assyov & A. Tosheva (SOM 160879). Single plant in flowers.

— Mt Sredna Gora (*Western*): in the vicinity of Gabra village, GN-11, 03.06.2005, with flowers, observed by B. Assyov & R. Vassilev. Single plant in flowers.

Orchis papilionacea is a Mediterranean element found in half of the floristic regions of the country (Assyov & Petrova 2006). Our observations show that in Mt Strandzha and Rhodopi Mts (*Eastern*) there are several numerous populations but in the rest of the country the populations are usually small, occasionally with single individuals (Dimitrov & Tsonev 2001; Assyov & Vassilev 2004; Petrova & al. 2006 and personal observations). Apparently, the species is in the process of getting established in new places.

Poaceae

59. *Bromus barcensis* Simonk.

Bu Mt Sredna Gora (*Western*): in dry grassy places on the southern slope of peak Lalina Mogila, GN-01, 12.06.2005, coll. A. Petrova & R. Vassilev (SOM 162013).

60. *Eleusine indica* (L.) Gaertn.

Bu Mt Belasitsa: near Belasitsa chalet, Petrich district, ca. 720 m, FL-88, 30.09.2003, in spikes, coll. B. Assyov (SOM 160872).

A new species for the flora of Mt Belasitsa. This adventive plant is quite common in the town of Petrich and it seemed appropriate to note the expansion of its distribution.

61. *Phalaris arundinacea* L.

Bu Rila Mts: beside a tributary of river Iskur, N of Samokov town, GM-19, 15.06.2002, with spikes, coll. A. Petrova (SOM 159579).

This is the first record for the Rila Mts of this boreal floristic element, known from the neighbouring floristic regions.

Report 62**Stoyan Stoyanov**

Institute of Botany, Bulgarian Academy of Sciences, Acad. Georgi Bonchev St., bl. 23, 1113 Sofia, Bulgaria, e-mail: stoyanov@bio.bas.bg

A new record for the Turkish flora.

Apiaceae**62. *Bupleurum apiculatum* Friv.**

Tu(E) A1(E) Kirklareli: Sogucak (NW of Pazarli town), *Quercus alti*, 28.06.1973, coll./ det. A. Baytop (ISTE 26138, sub *B. flavum* Forssk.).

Bupleurum apiculatum was first mentioned for the flora of the European Turkey by Webb (1966). Due to a lack of herbarium specimens, this fact was ignored in the subsequent thorough studies of genus *Bupleurum* for Europe (Tutin 1968; Snogerup & Snogerup 2001), as well as in the work on the *Flora of Turkey and the East Aegean Islands* (Snogerup 1972).

During the studies under the project "Preparation of the Bulgarian NATURA 2000 network of protected zones", *B. apiculatum* was found in the region of Shtit village, Svilengrad municipality, as well as in the Derventska Hills. Both localities are in close vicinity of the Bulgarian-Turkish border, which stirred up certain doubts that this species was neglected in the Turkish flora. A reference to the ISTE Herbarium, which keeps mainly materials from the region of Istanbul and European Turkey, corroborated the presence of *B. apiculatum*. The species habitats in Turkish Thrace outline the southeast periphery of its area of distribution.

Bupleurum apiculatum is a widely distributed Balkan endemic. Its area of distribution covers the Central (Macedonia and Serbia) and Eastern Balkans, spreading northwards to the Romanian Dobroudzha, and southwards to North Greece. The species *B. flavum* has a Balkan-Anatolian area of dis-

tribution, which comprises the Thrace region, the west and southwest parts of the Asia Minor Peninsula, and the East Aegean Islands. In the southeast part of the Balkan Peninsula (the area of Bulgarian, Greek and Turkish Thrace) these two species occur sympatrically, which in combination with their morphological similarity – they belong to *Bupleurum* section *Aristata* subsection *Aristata* (Snogerup & Snogerup 2001) leads to frequent mistakes in their determination. Some peculiarities of the bracts and bracteoles, in fact, make *B. apiculatum* and *B. flavum* well distinguishable.

The bracteoles of *B. apiculatum* have on top a distinct, 2-3 mm long awn; the central of the three main veins has few inconspicuous short secondary veins, or they are missing. The bracts are herbaceous, narrow-lanceolate, with three inconspicuous parallel veins, without second veins and with narrow scarious strip on the periphery (Fig. 1).

The bracteoles of *B. flavum* are mucronate on top, or have an awn up to 1 mm long; the main veins are pronounced and form elevated ridges; secondary veins are missing. The bracts are scarious, lanceolate, with three visible main veins, the central



Fig. 1. *Bupleurum apiculatum*: a – bracteole; b – bract.

one with indistinct secondary veins, with a wide scarious strip on the periphery (Fig. 2).

Acknowledgements. The author would like to express his gratitude to the staff of the ISTE Herbarium at the Faculty of Pharmacy of the Istanbul University for the access to the materials of genus *Bupleurum*. Special gratitude is extended to Prof. Neriman Özhatay, who provided financial support for the Bulgarian participants in the International Herbarium Techniques Course (Istanbul, 2-13 October 2006).



Fig. 2. *Bupleurum flavum*:
a – bracteole; b – bract.

Report 63

Kit Tan¹, Uwe Raabe² & Gert Vold³

¹ Institute of Biology, University of Copenhagen, Øster Farimagsgade 2D, DK-1353 Copenhagen K, Denmark, e-mail: kitt@bi.ku.dk (author for correspondence)

² Borgsheider Weg 11, D-45770 Marl, Germany

³ Botanical Garden, University of Copenhagen, Øster Farimagsgade 2C, DK-1353 Copenhagen K, Denmark

Berberidaceae

63. *Gymnospermium altaicum* subsp. *peloponnesiacum* Phitos (Figs. 3-4)

Gr Nomos Achaïas, Eparchia Kalavriton: Valimi to Zarouchla, above the village of Kamarovrissi, in open *Abies cephalonica* forest and stony slopes above, 1350-1500 m, 38°04'N, 22°16'E, 06.05.2007 & 25.05.2007, Kit Tan & G. Vold 29310 (C, GB, UPA, herb. Sfikas); loc. *ibid.*, 08.05.2006, coll. U. Raabe (B, MSTR, herb. Raabe).

Further to the contribution on *Gymnospermium* in Greece by Arne Strid in Fisis 116:12-13 (March 2007) we provide a report of a new locality for *Gym-*

nospermium altaicum subsp. *peloponnesiacum*. This taxon was previously considered rare and scattered in Greece, known from only three mountains in the Peloponnese (Mts Panachaiko, Klokos and Menalo). It is now recorded from a fourth mountain (apparently without a name) south of the village of Valimi in northern Peloponnese. Bornmüller (1928) recorded its existence in the vicinity of the monastery of Mega Spileo (based on a collection by Liebmann, sub nom. *Leontice altaica* Pall.). This has never been confirmed by recent collections although there is no reason to doubt the record. Our new locality is at approximately the same latitude as Mega Spileo but

nearer to the Krathis gorge instead of the Vouraikos gorge and thus represents the easternmost limit of the distribution in Greece. The plants occurred in thousands; we estimate that there must be more than 10000 individuals in the open *Abies* forest and the calcareous stony slopes above, right up to the summit. These must be the largest populations known. All plants were growing vigorously and most were fruiting profusely. Flowering had ended by late April, the withered remnants



Fig. 3. *Gymnospermium altaicum* subsp. *peloponnesiacum*. Photo Kit Tan.

Fig. 4. *G. altaicum* subsp. *peloponnesiacum*: fruits. Photo Kit Tan.



of yellow coloured sepals were seen. Underground tubers ranged in size from 1.5 cm to a previously unrecorded dimension of 6 cm across. Growing together were *Corydalis solida* subsp. *incisa*, *Geranium macrostylum*, *Lamium garganicum*, *Doronicum orientale*, *Pulmonaria cesatiana*, *Ornithogalum* spp., and at higher altitudes, *Sternbergia colchiciflora*. One large individual of *Solenanthes stamineus* was observed (collected by Raabe in 2006; material in B, herb. Raabe). In Greece it had only been recorded from Mts Killini, Chelmos and Giona. Seed of the *Gymnospermium* was collected on a later visit of 25.05.2007 and distributed to Botanic Gardens. The

seeds are black to blackish-brown when fully ripe and the membranous white aril shrivels to a bright orange-red. Living material was also collected for the botanic gardens of Copenhagen and Göteborg.

Reports 64–75

Kit Tan¹, Gert Vold² & George Sfikas³

¹ Institute of Biology, University of Copenhagen, Øster Farimagsgade 2D, DK-1353 Copenhagen K, Denmark, e-mail: kitt@bi.ku.dk (author for correspondence)

² Botanical Garden, University of Copenhagen, Øster Farimagsgade 2C, DK-1353 Copenhagen K, Denmark

³ 2 Vyzantiou St., Argyroupolis, Athens, Greece

Based on further floristic investigations the distributions of several taxa in Greece are extended with some disjunct localities.

Fabaceae

64. *Anthyllis vulneraria* subsp. *scardica* (Wettst.) Bergmeier

Gr Nomos Grevenon, Eparchia Grevenon: rocky slopes of Kamvounia Ori, west of Mt Vounása, 39°57'N, 21°46'E, 21.05.2006, *Sfikas* 13716 (herb. Sfikas), det. *Kit Tan*; loc. *ibid.*, *Willing* 16866 (B). New for Mt Vounása in North Central Greece.

65. *Medicago strasseri* Greuter, Matthijs & H, Risse
Gr Nomos Irakliou, Eparchia Padiados: Aposelemis gorge, limestone, 35°17'N, 25°24'E, 04.04.2002, *Sfikas* 12344 (herb. Sfikas).

Endemic to the Cretan area. First record from the Aposelemis gorge in East Central Crete. Closely related to the widely distributed, planted and naturalized *M. arborea* and perhaps the indigenous form of it.

66. *Onobrychis viciifolia* Scop.

Gr Nomos Fokidos, Eparchia Parnassidos: between Parnassos and Giona, near the Mineral Museum, 38°40'N, 22°19'E, 22.05.2004, *Sfikas* 13619, det. *Kit Tan* (herb. Sfikas).

New for the phytogeographical region Sterea Ellas in South Central Greece; only three other records are known, all from the Northeast.

67. *Ononis viscosa* subsp. *breviflora* (DC.) Nyman

Gr Nomos Arkadias, Eparchia Gortinias: Lousios gorge, c. 400 m, 37°35'N, 22°03'E, 15.06.1997, *Sfikas* 13734, det. *Kit Tan* (herb. Sfikas).

New for the eparchia in East Central Peloponnese.

Gentianaceae

68. *Gentiana verna* subsp. *balcanica* N.M. Pritch.

Gr Nomos Ioanninon, Eparchia Konitsis: Summit ar-

ea and NW slopes of Trapezitsa. Covered with ice crystals in short-turfed meadow with *Carlina acaulis* subsp. *simplex*, 1800-2000 m, 40°03'N, 20°48'E, 15.10.2006, *Kit Tan* & *G. Vold* 29175 (herb. Kit). Observed in full flower in August 2006.

New for Mt Trapezitsa in N Pindos.

Geraniaceae

69. *Geranium peloponesiacum* Boiss.

Gr Nomos Evvias, Eparchia Karistias: Mt Ochi, 38°04'N, 24°29'E, 05.2002, coll. *M. Aperghis*, det. *Kit Tan* (sub *Sfikas* 13311, herb. Sfikas).

New for Mt Ochi in S Evvia.

Gesneriaceae

70. *Ramonda serbica* Pančić

Gr Nomos Ioanninon, Eparchia Konitsis: NW slopes of Trapezitsa. Crevices and ledges on N-facing vertical limestone rocks in *Abies borisii-regis* and *Pinus* forest, 1700-2000 m, 40°03'N, 20°47'E, 15.10.2006, *Kit Tan* & *G. Vold* 29150 (living plants in Copenhagen Botanic Garden and University of Belgrade Botanic Garden).

New for Mt Trapezitsa in N Pindos.

Lamiaceae

71. *Acinos nanus* P.H. Davis & Doroszenko

Gr Nomos Dodekanisou, Eparchia Kalimnou: Vathy, 36°58'N, 27°02'E, 03.05.1976, *A. Hansen* 256 (C).

New for the island of Kalimnos; in the East Aegean area, previously known only from the islands of Samos and Rodos.

Onagraceae

72. *Epilobium angustifolium* L.

Gr Nomos Lakonias, Eparchia Lakedemonas: Mt Parnonas. 9.5 km along forest road to EOS katafygion from junction between Agios Petros and Moni

Malevis, schistose road embankment in coniferous forest, c.1200 m, 37°15'N, 22°35'E, 9.09.1997, *Kit Tan* & *Strid* obs. (voucher not collected but plants quite unmistakable).

New for the Peloponnese.

Scrophulariaceae

73. *Cymbalaria microcalyx* (Boiss.) Wettst. subsp. *microcalyx*

Gr Nomos Lakonias, Eparchia Epidavrou Limiras: Malea Peninsula, WNW of Neapolis Voion, north of the Viglafia wetland, rocks c. 100 m from the sea, 50 m, 5.03.2007, *Sfikas* s.n. (herb. Sfikas).

New for the Malea Peninsula and probably southernmost record of taxon on the Peloponnese, bridging the wide gap between the low mountains at the southern end of the Parnon range and the island of Kithira.

Cyperaceae

74. *Juncellus laevigatus* (L.) C.B. Clarke subsp. *laevigatus*

Gr Crete: Nomos Rethimnis, Eparchia Rethimnis, Rethymio harbour, 0-1 m, 35°22'N, 24°28'E, 02.05.1992, coll. *M. Thornberg* (herb. Thornberg), det. *Kit Tan*, 2006.

Apparently the earliest known collection for the Cretan area, predating *M. Ristow's* 1997 record from the same locality.

75. *Juncellus laevigatus* subsp. *distachyos* (All.) P.H. Davis

Gr Nomos Argolidos, Eparchia Navplias: just west of Navplion, 37°34'N, 22°49'E, 13.04.2006, coll. *M. Thornberg* (herb. Thornberg), det. *Kit Tan*, 2006.

First record for eastern Peloponnese; previously recorded from sand dunes in Nomos and Eparchia Ilias in the western part of the Peloponnese.

Reports 76–79

Gulden Yilmaz & Feruzan Dane

Department of Biology, Faculty of Science and Arts, University of Trakya, 22030 Edirne, Turkey, e-mail: guldenyl@yahoo.com; feruzandane@yahoo.com

New records of four *Verbascum* species are reported for some countries of European Turkey, on the basis of field-work carried out in the years 1983-2001, and especially in 1988.

Scrophulariaceae

76. *Verbascum blattaria* L.

Tu(E) Edirne: Centre, around the Faculty of Med-

icine, 26 m, 41°40'28"N, 26°33'39"E, 06.06.1987, coll. *E. Duzalan* (EDTU 1114); around the Faculty of Science and the Arts, 26 m, 41°40'28"N,

26°33'39"E, 27.07.2001, coll. *F. Dane & G. Yilmaz* (EDTU 8337); Tayakadin-Karakasim 2 km, 29 m, 41°31'N, 26°38'E, 09.06.1987, coll. *N. Basak, F. Dane & C. Yarci* (EDTU 1006); Lalapasa: Sinankoy, 181 m, 41°48'N, 26°43'E, 21.08.1983, coll. *A. Aras & E. Havsa* (EDTU 46).

— Tekirdag: Alpullu-Hayrabolu 1 km, 17 m, 41°12'42"N, 27°06'31"E, 22.06.1987, coll. *F. Dane & H. Arda* (EDTU 1464).

New for A1(E): Edirne and Tekirdag in European Turkey. The species has been known so far from A1(E): Kirklareli and A2(E) Istanbul (Huber-Morath 1978).

77. *Verbascum lagurus* Fisch. & C.A. Mey.

Tu(E) Edirne: Centre, Karaagac: around Sogutluk, 23 m, 41°39'28"N, 26°31'25"E, 13.07.1989, coll. *F. Dane* (EDTU 3787); around the Faculty of Medicine, 26 m, 41°40'28"N, 26°33'39"E, 09.07.1990, coll. *F. Dane* (EDTU 4475); around the Faculty of Science and the Arts, 26 m, 41°40'28"N, 26°33'39"E, 27.07.2001, coll. *F. Dane & G. Yilmaz* (EDTU 8366).

New for A1(E): Edirne in European Turkey. The species has been known so far from A1(E): Kirklareli and A2(E) Istanbul (Huber-Morath 1978).

78. *Verbascum sinuatum* L.

Tu(E) Edirne: Centre, around the Faculty of Medicine, 26 m, 41°40'28"N, 26°33'39"E, 03.07.2001, coll. *G. Yilmaz* (EDTU 8335); Karaagac, 23 m, 41°39'28"N, 26°31'25"E, 07.07.1988, coll. *F. Dane & N. Kaptanoglu* (EDTU 3688); Budakdoganca village, 98 m, 41°45'37"N, 26°20'33"E, 20.06.1988, coll. *F. Dane & N. Kaptanoglu* (EDTU 3854); Hacıumur village, 123 m, 41°43'N, 26°48'E, 30.05.1988, coll. *F. Dane* (EDTU 3856); Orhaniye village, 33 m, 40°43'47"N, 26°25'54"E, 20.08.1988, coll. *F. Dane & N. Kaptanoglu* (EDTU 2368).

New for A1(E): Edirne in European Turkey. The species has been known so far from A1(E): Kirklareli and A1(E): Tekirdag (Huber-Morath 1978).

79. *Verbascum mucronatum* Lam.

Tu(E) Edirne: Kesan, Erikli, 27 m, 40°38'17"N, 26°27'15"E, 21.06.1988, coll. *F. Dane & N. Kaptanoglu* (EDTU 2959); Enez, 5 m, 40°43'29"N, 26°04'57"E, 02.07.1988, coll. *F. Dane* (EDTU 2960).

New for A1(E): Edirne in European Turkey. The species has been known so far from A1(E): Tekirdag (Huber-Morath 1978).

References:

Anchev, M. 1992. *Brassicaceae*. – In: **Kozhuharov, S.** (ed.), Field Guide to the Vascular Plants in Bulgaria. Pp. 245-278. Naouka & Izkoustvo, Sofia (in Bulgarian).

Andreev, N. 1992. *Orchidaceae*. – In: **Kozhuharov, S.** (ed.), Field Guide to the Vascular Plants in Bulgaria. Pp. 537-548. Naouka & Izkoustvo, Sofia (in Bulgarian).

Apostolova, I. & Denchev, C. 1997. The current status of *Centaurea immanuelis-loewii* (*Compositae*) in Bulgaria. – *Bocconea*, 5(2): 703-706.

Assyov, B. & Petrova, A. (eds). 2006. Conspectus of the Bulgarian vascular flora. Distribution maps and floristic elements. Ed. 3. BBF, Sofia.

Assyov, B. & Vassilev, R. 2004. New chorological data and remarks on the distribution of some vascular plants in Bulgaria. – *Phytol. Balcan.*, 10(2-3): 191-199.

Aybeke, M. 2004. Anatomical researches of some orchid species growing in Thrace. *PhD Thesis*. Univ. Trakya, Graduate School of Nat. & Appl. Sci., Edirne (in Turkish, unpubl.).

Bancheva, S. & Greilhuber, J. 2006. Genome size in Bulgarian *Centaurea* s.l. (*Astreceae*). – *Pl. Syst. Evol.*, 257: 95-117.

Baytop, A. 1988. Turkish Material Present in the Herbarium of the Faculty of Pharmacy of Istanbul University II. Monocotyledones). Ist. Univ. Prof. Dr. Nazım Terzioğlu Print House, Istanbul (in Turkish).

Bornmüller, J. 1928. Ergebnis einer botanischen Reise nach Griechenland im Jahre 1926 (Zante, Cephalonia, Achaia, Phokis, Aetolien). – *Repert. Spec. Nov. Regni Veg.*, 25: 161-203.

Buttler, K.P. 1986. Orchideen die wildwachsenden Arten und Unterarten Europas, Vorderasiens und Nordafrikas. Mosaik Verlag, München.

Buttler, K.P. 1991. *Orchidaceae*. – In: **Strid, A. & Tan, Kit.** (eds). 1991. Mountain Flora of Greece. Vol. 2, pp. 864-883. Edinburgh Univ. Press, Edinburgh.

Chinkova, Ts. & Fakirova, V. 1970. A communication. – *Izv. Bot. Inst. (Sofia)*, 20: 239 (in Bulgarian).

Coode, M.J.E. & Cullen, J. 1967. *Silene* L. – In: **Davis, P.H.** (ed.), Flora of Turkey and the East Aegean Islands. Vol. 2, pp. 179-242. Univ. Press, Edinburgh.

Dalgic, G. & Dane, F. 1993. A contribution to the flora of Turkey: *Silene fabaroides*. – *J. Fac. Pharm.*, 29(1): 27-30.

Dane, F., Polat, N. & Olgun, G. 1992. New Records for the Flora of European Turkey. – In: *Proc. 11th Natl. Biol. Congr.* (24-27 June). Pp: 139-147. Univ. of Firat, Fac. Sci. & Arts, Elazig (in Turkish).

Davis, P.H. 1984. Flora of Turkey and the East Aegean Islands. Vol. 8. Edinburgh Univ. Press, Edinburgh.

Dimitrov, D. (ed.). 2002. Conspectus of the Bulgarian vascular flora. Distribution maps and floristic elements. Ed. 2. BSBCP, Sofia.

Dimitrov, D. & Gushev, Ch. 1995. New chorological data on the Bulgarian flora. – In: **Tsankov, G.** (ed.), *Proc. Jubil. Symp. on the*

- Centenary of the Acad. Boris Stephanov, 2-3 June, 1994, Sofia. Vol. 2, pp. 168-171. PSSA, Sofia (in Bulgarian).
- Dimitrov, D. & Tsonev, R.** 2001. New data on the vascular flora of the Tundzha Hilly Country, the Thracian Lowland and the Eastern Balkan Range. – *Phytol. Balcan.*, 7(3): 327-329.
- Georgieva, U.** 2000. *Romulea linaresii* Parl.: a new species for Mt Strandzha. – *Phytol. Balcan.*, 6(2-3): 177-178.
- Grozeva, N.** 2006. Report 53. – In: **Vladimirov, V. & al.** (comp.), New floristic records in the Balkans: 2. – *Phytol. Balcan.*, 12(2): 287.
- Grozeva, N., Georgieva, M. & Vulkova, M.** 2004. Seed and fern plants. – In: **Stoeva, M.** (ed.), Biological diversity of the Sinite Kamuni Nature Park. Pp. 9-112. Contrast Publishing House, Bogomilovo (in Bulgarian).
- Güner, A., Özhatay, N., Ekim, T. & Başer, K.H.C.** (eds). 2000. Flora of Turkey and the East Aegean Islands. Vol. 11. Suppl. 2. Edinburgh Univ. Press, Edinburgh.
- Gussev, Ch., Denchev, C., Koeva, J., Pavlova, D. & Dimitrov, D.** 1998a. New records of vascular plants for Northern Strandzha Mt. (SE Bulgaria). — *Doğa Türk. Bot. Derg.*, 22(6): 413-417.
- Gussev, Ch., Uzunov, D., Denchev, C. & Apostolov, K.** 1998b. New chorological data on vascular plants in the Eastern Rhodopes. – *Phytol. Balcan.*, 4(1-2): 187-195.
- Huber-Morath, A.** 1978. *Verbascum* L. – In: **Davis, P.H.** (ed.), Flora of Turkey and the East Aegean Islands. Vol. 6, pp. 461-603. Edinburgh Univ. Press, Edinburgh.
- Kitanov, B., Koeva-Todorovska, J. & Dimitrov, D.** 1987. Chorological data on the high-mountain flora of the Bulgarian southwest mountains. – *God. Sofiisk. Univ. "St. Kliment Ohridski" Biol. Fak.*, 2. Bot., 77: 61-69 (in Bulgarian).
- Markova, M.** 1989. *Thymus* L. – In: **Velčev, V.** (ed.), Fl. Reipubl. Popularis Bulgaricae. Vol. 9, pp. 288-331. In Aedibus Acad. Sci. Bulgaricae, Serdicae (in Bulgarian).
- Markova, M.** 1992. *Lamiaceae*. – In: **Kozhuharov, S.** (ed.), Field Guide to the Vascular Plants in Bulgaria. Pp. 471-496. Naouka & Izkoustvo, Sofia (in Bulgarian).
- Micevski, K.** 1993. The flora of the Republic of Macedonia. Vol. I, book 2. Macedonian Acad. Sci. & Arts, Skopje (in Macedonian).
- Özhatay, N. & Kültür, Ş.** 2006. Check-List of additional taxa to the Supplement Flora of Turkey III. – *Doğa Türk. Bot. Derg.*, 30: 281-316.
- Özhatay, N., Kültür, S. & Aksoy, N.** 1994. Check-list of additional taxa to the Supplement Flora of Turkey. – *Doğa Türk. Bot. Derg.*, 18: 497-514.
- Özhatay, N., Kültür, Ş. & Aksoy, N.** 1999. Check-List of additional taxa to the Supplement Flora of Turkey II. – *Doğa Türk. Bot. Derg.*, 23: 151-170.
- Panov, P.** 1975. New plants and critical notes on the Bulgarian flora. – In: **Velčev, V. & al.** (eds), In Hon. of Acad. Daki Jordanov. Pp. 245-252. Publishing House Bulg. Acad. Sci., Sofia (in Bulgarian).
- Peev, D.** 1992. *Asteraceae*. – In: **Kozhuharov, S.** (ed.), Field Guide to the Vascular Plants in Bulgaria. Pp. 142-227. Naouka & Izkoustvo, Sofia (in Bulgarian).
- Petrova, A.S.** 2004a. A contribution to the flora of East Bulgaria. – *Phytol. Balcan.*, 10(2-3): 201-205.
- Petrova, A.S.** 2004b. New data on the flora of West Bulgaria. – *Phytol. Balcan.*, 10(2-3): 211-215.
- Petrova, A.S., Gerasimova, I. & Vassilev, R.** 1998. A contribution to the flora of the Eastern Rhodopi Mountains, Bulgaria. – *Hist. Nat. Bulg.*, 9: 115-127 (in Bulgarian).
- Petrova, A.S., Venkova, D. & Sopotlieva, D.** 2006. A contribution to the flora of the Rhodopes and the Thracian Lowland. – *Hist. Nat. Bulg.*, 17: 7-13.
- Petrova, A.V.** 1992. *Boraginaceae* (pp. 230-245); *Silene* L. (315-323); *Iridaceae* (461-464); *Liliaceae* (497-519). – In: **Kozhuharov, S.** (ed.), Field Guide to the Vascular Plants in Bulgaria. Naouka & Izkoustvo, Sofia (in Bulgarian).
- Polunin, O.** 1987. Flowers of Greece and the Balkans. A field guide. Oxford Univ. Press, Oxford.
- Popova, M.** 1984. *Fritillaria orientalis* Adams. – In: **Velčev, V.** (ed.), Red Data Book of the PR Bulgaria. Vol. 1. Plants, p. 70. Publishing House Bulg. Acad. Sci., Sofia (in Bulgarian).
- Snogerup, S.** 1972. *Bupleurum* L. – In: **Davis, P.H.** (ed.), Flora of Turkey and the East Aegean Islands. Vol. 4, pp. 393-418. Edinburgh Univ. Press, Edinburgh.
- Snogerup, S. & Snogerup, B.** 2001. *Bupleurum* L. (*Umbelliferae*) in Europe – 1. The annuals, *B. sect. Bupleurum* and sect. *Aristata*. – *Willdenowia*, 31: 205-308.
- Stanev, S.** 1965. Floristic materials from the Mt Golo Burdo, Southwest Bulgaria. – *Izv. Bot. Inst. (Sofia)*, 15: 279-280 (in Bulgarian).
- Stanev, S.** 1971. Materials and notes on the flora in Bulgaria. – *Izv. Bot. Inst. (Sofia)*, 21: 211-219 (in Bulgarian).
- Stefanova-Gateva, B.** 1995. *Verbascum* L. – In: **Kozhuharov, S.** (ed.), Fl. Reipubl. Bulgaricae. Vol. 10, pp. 26-100. In Aedibus Acad. Sci. Bulgaricae, Serdicae (in Bulgarian).
- Stojanov, N.** 1964. *Orchidaceae* Juss. – In: **Jordanov, D.** (ed.), Fl. Reipubl. Popularis Bulgaricae. Vol. 2, pp. 349-399. In Aedibus Acad. Sci. Bulgaricae, Serdicae (in Bulgarian).
- Stojanov, N. & Stefanov, B.** 1948. Flora of Bulgaria. Ed. 3. Univ. Press, Sofia (in Bulgarian).
- Tashev, A., Vitkova, A. & Russakova, V.** 2006. Distribution of *Ophrys apifera* Huds. (*Orchidaceae*) in Bulgaria. – *Fl. Medit.*, 16: 247-252.
- Tutin, T.G.** 1968. *Bupleurum* L. – In: **Tutin, T.G. & al.** (eds), Flora Europaea. Vol. 2, pp. 345-350. Cambridge Univ. Press, Cambridge.
- Tutin, T.G., Heywood, V.N., Burges, N.A., Moore, D.M., Valentine, D.H., Walters, S.M. & Webb, D.A.** (eds). 1980. Flora Europaea. Vol. 5. Cambridge Univ. Press, Cambridge.
- Velčev, V. & Bondev, I.** 1961. Neues Material zur Flora Bulgariens aus dem Strumatal, südlich des Kresnadurchbruchs. – *Izv. Bot. Inst. (Sofia)*, 8: 215-223 (in Bulgarian).
- Vladimirov, V.** 2001. New chorological data for four alien species in the Bulgarian flora. – *Phytol. Balcan.*, 7(1): 33-37.
- Webb, D.A.** 1966. The flora of European Turkey. – *Proc. Roy. Irish Acad.*, 65: 1-100.
- Yanev, A.** 1964. *Fritillaria* L. – In: **Jordanov, D.** (ed.), Fl. Reipubl. Popularis Bulgaricae. Vol. 2, pp. 254-265. In Aedibus Acad. Sci. Bulgaricae, Serdicae (in Bulgarian).